

CLAIMS

What is claimed is:

1. (currently amended) A method for [inhibiting accumulation] increasing efficiency of heat transfer of [reflective ash on surfaces in] a furnace in which calcium-containing coal is burned, comprising:
 - (a) adding to the coal enough of a fluxing agent-free composition comprising an iron compound to produce treated coal that is free of added fluxing agent and contains an effective amount of the iron compound; and
 - (b) burning the treated coal, forming calcium ferrite, thereby increasing the efficiency of the heat transfer of the furnace.
2. (original) A method as set forth in claim 1 wherein the iron compound is iron oxide.
3. (original) A method as set forth in claim 2 wherein the iron oxide is ferric oxide.
4. (original) A method as set forth in claim 1 wherein calcium oxide is produced when the treated coal is burned and the iron compound reacts with the calcium oxide to form the calcium ferrite.
5. (original) A method as set forth in claim 4 wherein the iron compound is iron oxide.
6. (original) A method as set forth in claim 5 wherein the iron oxide is ferric oxide.
7. (original) A method as set forth in claim 1, comprising the steps of:
 - (a) adding an effective amount of an iron compound to the coal to produce treated coal free of added fluxing agent;
 - (b) grinding the treated coal to produce ground, treated coal free of added fluxing agent;
 - (c) introducing the ground, treated coal free of added fluxing agent into a furnace; and
 - (d) burning the ground, treated coal free of added fluxing agent in the furnace, producing calcium ferrite.
8. (original) A method as set forth in claim 3 wherein the ferric oxide is added in an amount of from about 0.25% to about 0.75% based on the weight of the coal.

9. (original) A method as set forth in claim 1 wherein the method consists essentially of:

(a) adding to the coal enough of a fluxing agent-free composition comprising an iron compound to produce treated coal that is free of added fluxing agent and contains an effective amount of the iron compound; and

(b) burning the treated coal.

10. (original) A method as set forth in claim 9 wherein the fluxing agent-free composition consists essentially of ferric oxide.

11. (cancel) A method for increasing the melting point of ash produced during the burning of calcium-containing coal, comprising:

(a) adding an effective amount of an iron compound to the coal to produce treated coal; and

(b) burning the treated coal, producing ash of increased melting point.

12. (cancel) A method as set forth in claim 11 wherein the iron compound is iron oxide.

13. (cancel) A method as set forth in claim 12 wherein the iron oxide is ferric oxide.

14. (cancel) A method as set forth in claim 13, comprising the steps of:

(a) adding an effective amount of an iron compound to the coal to produce treated coal;

(b) grinding the treated coal to produce ground, treated coal;

(c) introducing the ground, treated coal into a furnace; and

(d) burning the ground, treated coal in the furnace, producing ash of increased melting point.

15. (cancel) A method as set forth in claim 14, consisting essentially of the steps of:

(a) adding to the coal enough of a composition consisting essentially of ferric oxide to produce treated coal containing an effective amount of ferric oxide;

(b) grinding the treated coal to produce ground, treated coal;

(c) introducing the ground, treated coal into a furnace; and

(d) burning the ground, treated coal in the furnace, producing ash of increased melting point.

16. (New) The method of claim 1, further comprising reducing the furnace exit gas temperature (FEGT).